

What is Claimed:

1. A lockset comprising:
an elongated sleeve with an elongated, partly curved exterior cross section and exterior protrusions for slidably gripping a door wherein the sleeve defines an interior region; and
a latch mechanism with a housing which has at least in part a non-circular exterior cross section and a latch bolt carried by the housing and movable relative thereto wherein at least part of the non-circular cross section of the housing is slidable into the interior region of the sleeve such that part of the interior cross section of the sleeve slidably mates with and is adjacent to a portion of the non-circular exterior cross section of the housing.
2. A lockset as in claim 1 wherein the protrusions are integrally formed on the sleeve and extend asymmetrically in at least one dimension along the sleeve.
3. A lockset as in claim 1 wherein the sleeve has, at least in part, an interior elongated, partly curved cross section.
4. A lockset as in claim 3 wherein at least a portion of the housing is curved to match the sleeve.
5. A lockset as in claim 4 wherein the exterior cross section of the sleeve matches the interior cross section of the sleeve and defines a sleeve wall therebetween.
6. A lockset as in claim 5 wherein the sleeve is formed of one of metal or plastic.
7. A lockset as in claim 2 wherein the interior region of the sleeve is bounded by at least two spaced apart arcuate wall sections.
8. A lockset as in claim 7 wherein the spaced apart arcuate wall sections of the sleeve are joined by first and second spaced apart linear wall sections.
9. A lockset as in claim 8 wherein the housing of the latch mechanism exhibits a cross sectional profile which is non-rotatably receivable in a respective sleeve.
10. A lockset as in claim 9 wherein a portion of the housing of the latch mechanism slidably mates with an interior portion of the respective sleeve.
11. A lockset as in claim 10 wherein the sleeve is formed of a cured resin.

12. A lockset as in claim 11 wherein the latch bolt has a first, height, parameter and second, width parameter wherein the ratio of the first parameter to the second parameter is greater than 1.8.

5 13. A lockset as in claim 11 wherein the housing of the latch mechanism exhibits a cross sectional profile which has a first, height, parameter and a second, width parameter wherein the ratio of the first parameter to the second parameter is greater than 1.8.

14. A lockset as in claim 12 wherein the housing of the latch mechanism has an exterior surface which limits insertion of the housing into the sleeve.

10 15. A lockset as in claim 14 wherein the latch mechanism exhibits a latch bolt actuating opening with a centerline displaced a selected depth from the exterior surface of the housing, wherein the interior region of the sleeve has a predetermined width with a ratio of the depth to the width exceeding 1.8.

15 16. A lockset as in claim 15 which includes a snap fit cover for closing an end of a respective sleeve.

17. A door comprising:

a substantially solid core having elongated, first and second planar surfaces which are spaced apart a selected width dimension and which are bounded by first and second elongated, spaced apart edges; and

20 an opening of a selected depth defined in each edge wherein each opening is formed with first and second curved ends which are joined by first and second spaced apart planar sides.

25 18. A door as in claim 17 wherein the width dimension has a value less than one inch and wherein the spacing between planar sides of the opening is greater than 60 percent of the width dimension.

19. A door as in claim 17 wherein a maximal spacing parameter between surfaces of the curved ends is on the order of 200 percent of the spacing between the planar sides.

30 20. A door as in claim 17 wherein the core comprises at least one of wood, particulate matter, honeycombed material, cured foamed resin, and cured plastic substantially devoid of internal spaces.

21. A mortise lock installable in an opening in an edge of a door of a selected thickness, the lock comprising:

5 a housing having a first end with an insertion depth limiting surface locatable adjacent to the door edge wherein the housing has a partly curved, partly elongated cross section dimensioned so as to be slidably received within the edge of the door;

10 a latch mechanism with a locking end movably carried by the housing wherein the locking end extends from the first end in a locking position and exhibits a second position retracted from the locking position, a locking end retracting port carried by the housing with a central axis displaced from the limiting surface a selected distance wherein the central axis is perpendicular to a direction of movement of the locking end wherein the housing exhibits an aspect ratio, the selected distance divided by a width parameter of the housing, which is greater than 2.

15 22. A lock as in claim 21 wherein the locking end has a selected height dimension with an aspect ratio, the height dimension divided by the width parameter of the housing which is greater than 1.8.

23. A lock as in claim 22 wherein the housing includes first and second displaced, curved exterior surfaces joined by third and fourth spaced apart planar surfaces.

20 24. A lock as in claim 23 wherein the spaced apart planar surfaces extend parallel to the direction of movement of the locking end.

25. A lock as in claim 24 wherein the width of the housing is on the order of one-half inch and wherein the height dimension is on the order of three-quarters of an inch.

25 26. A lock as in claim 25 wherein the first end carries at least one fastener receiving perforation for attaching the housing to an adjacent door edge.

27. A lock as in claim 25 which includes a rotatable actuating shaft which extends through the port.

30 28. A lock as in claim 27 wherein the curved cross section of the housing slidably engages at least a portion of an insert in the edge of the door.

29. A lock as in claim 21 wherein the selected distance exceeds one inch and the width parameter has a value less than .6 inches.

30. A door comprising:

a door core which has first and second spaced apart elongated, planar sides wherein the sides are bounded by edges having a predetermined width parameter wherein first and second spaced apart, partly curved, partly planer openings are formed in respective edges;

first and second inserts, wherein each insert is formed of one of metal or plastic, wherein each insert has an exterior profile which slidingly mates with a respective opening and wherein the inserts enhance door strength in the vicinity of the respective opening.

31. A door as in claim 30 wherein the inserts are each formed with first and second curved end walls which are joined by planar sides to define an interior region.

32. A door comprising:

a door core which has first and second spaced apart elongated, planar sides wherein the sides are bounded by edges having a predetermined width parameter wherein first and second spaced apart, partially curved borings are formed in respective edges;

first and second inserts, wherein each insert is formed of plastic, wherein each insert has an exterior partly curved profile which slidingly mates with a respective boring;

a cover removably attachable to one of a respective edge and a respective insert for closing a respective insert; and

a latch mechanism sized to fit, at least in part, in one of the inserts only in the absence of a respective cover, and wherein the latch mechanism can be affixed to the door by at least one of a fastener which extends into a respective adjacent edge or by frictional forces between the respective insert and the mechanism.

33. A door as in claim 32 wherein the latch mechanism has a body portion which has an actuator port displaced from an exterior edge of a respective insert an amount in excess of one inch and wherein the port has a centerline which extends

generally perpendicular to the sides, with the port generally aligned with an opening in each side.

34. A door as in claim 33 which includes an actuating shaft which extends through the port and the respective openings in the sides.

5 35. A door as in claim 32 wherein the door has a width parameter less than one inch and the borings have a width parameter on the order of five-eighths of an inch.

36. A door as in claim 35 wherein the borings exhibit first and second spaced apart planar sides joined by third and fourth sides.

10 37. A door as in claim 36 wherein each insert slidably engages a respective pair of planar sides.

38. A door as in claim 32 wherein the latch mechanism carries a fastener receiving feature for attaching the mechanism to the edge of the door with a fastener.

15 39. A door as in claim 38 wherein the latch mechanism includes a housing, receivable in the insert when the mechanism is attached to the edge of the door and wherein the housing has cross section which is at least in part curved.

40. A door as in claim 39 wherein the inserts each carry a door body engaging protrusion.

41. A door as in claim 33 wherein the insert includes at least one opening aligned with the port.

20 42. A door comprising:
a door body which has first and second spaced apart elongated, planar sides wherein the sides are bounded by edges having a predetermined width and at least one elongated, non-circular boring in a first edge;

25 at least one moisture excluding hollow, lock receiving plastic insert wherein the insert has an exterior profile which slidably mates with the boring and extends laterally into the door body; and

a removable cover for closing the insert.

30 43. A door as in claim 42 comprising:
a second non-circular boring, substantially the same as the at least one boring in a second, parallel edge, a second insert substantially the same as the at least one insert; and

a second cover for removably closing the second insert.

44. A door as in claim 42 wherein the boring has first and second curved surfaces joined by first and second parallel planar surfaces.

5 45. A door as in claim 44 wherein the insert comprises first and second curved ends joined by first and second spaced apart, planar, parallel walls and at least one axially oriented, laterally extending, door engaging protrusion.

46. A door as in claim 45 which includes a latch mechanism carried at least in part in the insert.

10 47. A door as in claim 46 wherein the mechanism includes a housing carried in the insert and a latch which extends therefrom.

48. A door as in claim 47 wherein the housing, at least in part, slidably engages the insert.

49. A unitized door comprising:
a substantially solid core formed of one of particulate matter, foamed plastic resin or
15 solid plastic resin wherein the core exhibits at least one elongated edge with an opening having curved ends joined by planar sides formed therein wherein the curved ends permit additional material to remain in the core which provides greater core strength in the vicinity of ends of the opening than would be available in the presence of substantially square corners.

20 50. A door as in claim 49 which includes a core reinforcing insert formed of one of metal or a plastic resin positioned in the opening with an exterior periphery of the insert positioned adjacent to surfaces of the opening.

51. A door as in claim 49 wherein the insert carries at least one axially oriented, laterally extending core engaging protrusion on the exterior periphery wherein
25 as the insert enters the opening the protrusion engages the core to increase retention forces on the insert.

52. A door as in claim 49 wherein where the core is formed of particulate matter the insert provides a moisture excluding seal in the opening.

53. A lockset comprising:

an elongated plastic sleeve with an elongated, exterior cross section and exterior protrusions for slidably gripping a door wherein the sleeve defines an interior region; and

5 a latch mechanism with a housing which has at least in part a selected exterior cross section and a latch bolt carried by the housing and movable relative thereto wherein at least part of the housing is retainable in the interior region of the sleeve such that part of the interior cross section of the sleeve slidably mates with and is adjacent to a portion of the exterior cross section of the housing.

10 54. A lockset as in claim 53 wherein the protrusions are integrally formed on the sleeve and extend asymmetrically in at least one dimension along the sleeve.

55. A lockset as in claim 53 wherein the sleeve and the housing of one are permanently attached to one another or separately engageable with one another.

56. A lockset as in claim 55 wherein the sleeve exhibits a partly curved exterior cross section.

15 57. A lockset as in claim 56 wherein the sleeve exhibits an elongated cross section with first and second curved ends.

58. A mortise lock for a door comprising:

an exterior container formed of a moisture resistant material wherein the container defines a bounded internal region;

20 a lock mechanism carried in the internal region of the container wherein the mechanism includes a retractable, biased bolt having a steady state, extended latching position and a non-latching retracted position wherein the container is sized to be installable in an opening formed in an edge of a door with a moisture absorbing core, and wherein when installed, the container provides a moisture excluding barrier
25 in the opening in the edge of the door wherein the moisture is substantially blocked from being absorbed by the core.

59. A mortise lock as in claim 58 wherein the lock mechanism is fixedly carried within the container.

30 60. A mortise lock as in claim 58 wherein the container comprises a sleeve which releasibly receives the lock mechanism therein.

61. A mortise lock as in claim 60 wherein the sleeve comprises molded plastic.

62. A mortise lock as in claim 58 wherein the exterior container comprises a plastic lock mechanism housing.

5 63. A mortise lock as in claim 62 wherein the lock mechanism is slidably retained in the exterior container.

64. A door comprising:

a moisture absorbing door core which has first and second spaced apart elongated, planar sides wherein the sides are bounded by edges having a predetermined width parameter wherein first and second spaced apart, at least partially curved borings are formed in respective edges;

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at least one insert, wherein the insert is formed of plastic, wherein the insert has an exterior profile which slidably mates with a respective boring;

a latch mechanism sized to fit, at least in part, in one of the inserts, and wherein the latch mechanism can be affixed to the door by at least one of a fastener which extends into a respective adjacent edge or by frictional forces between the respective insert and the mechanism, and wherein the insert forms a seal which excludes moisture from the core.

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65. A door as in claim 64 wherein the door has a width parameter less than one inch and the borings have a width parameter on the order of five-eighths of an inch.

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66. A door as in claim 64 wherein the borings exhibit first and second spaced apart planar sides joined by third and fourth curved sides.

67. A door as in claim 64 wherein the latch mechanism is fixedly attached to the insert forming an integral unit therewith.

25 68. A door as in claim 64 wherein the latch mechanism includes a housing, removably receivable in the insert when the mechanism is attached to the edge of the door and wherein the housing has cross section which is at least in part curved.

69. A door as in claim 64 wherein the insert comprises a substantially sealed housing for the latch mechanism.

30 70. A door comprising:

a door body which has first and second spaced apart elongated, planar sides wherein the sides are bounded by edges having a predetermined width and at least one elongated non-circular boring in a first edge;

5 at least one moisture excluding, mortise lock wherein the lock has an exterior profile which slidably mates with the boring and extends laterally into the door body and substantially fills the boring.

71. A door as in claim 70 comprising:

 a second non-circular boring, substantially the same as the at least one boring in a second, parallel edge; and

10 a removable cover for closing the insert.

72. a door comprising:

 a moisture absorbing core which has first and second spaced apart elongated, planar sides wherein the sides are bounded by edges having a predetermined width and at least one elongated opening in a first edge;

15 at least one moisture excluding mortise lock wherein the lock has an exterior profile which slidably mates with the opening and extends laterally into the core and wherein the lock seals the core and blocks an influx of exterior moisture from entering the opening.

20 73. A door as in claim 72 wherein the lock includes a removable moisture resistant insert which substantially fills and seals the opening and contains a lock mechanism wherein an inflow of exterior moisture into the lock mechanism is blocked from being absorbed by the core.